AMENDMENT TO THE SPECIFICATION

Please add the following new paragraphs on page 4, between the last line of paragraph [0010] and the header "BRIEF DESCRIPTION OF DRAWINGS":

According to especially preferred embodiments of the present invention, an improved process is provided for the preparation of at least one primary alcohol by the hydrogenation of an unsaturated aldehyde reaction product produced by an aqueous base-catalyzed crossed-aldol reaction between a first aldehyde containing 3-5 carbons and a second aldehyde containing 6-11 carbons, wherein the selectivity of the crossed-aldol condensation reaction is enhanced through the use of a water-soluble phase-transfer catalyst. Preferably, the 3-5 carbon aldehyde is propionaldehyde, n-butyraldehyde, isovaleraldehyde, or valeraldehyde.

In some embodiments, the 2, 4-diethyloctanol is produced concurrently with 2-ethylhexanol via the hydrogenation of 2-ethyl-2-hexenal and 2,4-diethyl-2-octenal produced form an aldol condensation reaction, which makes use of n-butyraldehyde and 2-ethylhexanal as the reactant aldehydes. Preferably, the molar ratio of 2-ethylhexanal to n-butyraldehyde fed to the crossed-aldol condensation reaction is about 1 to about 10, more preferably about 1 to about 5. In certain embodiments, the 2-ethylhexanal is produced by the partial hydrogenation of 2-ethyl-2-hexenal using a Group VIII metal catalyst, wherein the 2-ethyl-2-hexenal being produced by an aldol condensation reaction of n-butyraldehyde. A portion of the unreacted 2-ethylhexanal and 2-ethyl-2-hexenal may be covered from the crossed-aldol condensation reaction product in preference to hydrogenation to 2-ethylhexanol. In such embodiments, the 2-ethylhexanal is produced by the Group VIII metal catalyzed partial

hydrogenation of the recovered 2-ethyl-2-hexenal. An especially preferred Group VII metal is palladium.

According to other preferred embodiments of the present invention, the water soluble phase transfer catalyst is quaternary ammonium or phosphonium salt.

One preferred embodiment of the present invention comprises removing the phase-transfer catalyst from the reaction product by water washing. Preferably the phase-transfer catalyst is recovered from the water washing by the addition of an alkali metal hydroxide to the water washing to a concentration of 2.5 to 12.5 molar, thereby producing a first phase containing the majority of the phase-transfer catalyst and a second aqueous alkali metal hydroxide phase. The alkali metal hydroxide is most preferably sodium hydroxide.

The cationic portion of the phase-transfer catalyst is preferably methyltributylammonium, tetrabutylammonium, benzyltriethylammonium, ethyltributylammonium, tetraethylammonium, tetrahexylammonium, tetrapropylammonium, or tetrabutylphosphonium. The anionic portion of the phase-transfer catalyst is preferably chloride, bromide, iodide, bisulfate, sulfate, or hydroxide. The aqueous base is preferably an alkali metal hydroxide, such as sodium hydroxide or potassium hydroxide. In some embodiments, the aqueous base comprises a 10-50 weight percent solution of sodium hydroxide. In other embodiments, the aqueous base is the hydroxide form of a quaternary ammonium or phosphonium salt.

The aldol reaction is preferably performed at a temperature from about 30 to 120^{0}C, more preferably from about 30 to about 100^{0}C. In some preferred embodiments, the crossed-aldol reaction takes place in a two-phase system comprising a first organic aldehyde phase and a second aqueous phase, and the phase-transfer catalyst is primarily in the

organic aldehyde phase. In other preferred embodiments, the crossed-aldol reaction takes place in a three-phase system comprising a first organic aldehyde phase, a second aqueous phase, and a third phase containing the majority of the phase-transfer catalyst.

Preferably, the molar ratio of the phase-transfer catalyst to the first aldehyde is about 0.01 to about 2, more preferably about 0.1 to about 2.

The aldol reaction may performed in a continuous or batch reactor. The unsaturated aldehyde reaction product may be hydrogenated in the gas and/or liquid phase in a single or multistage process.